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**Back to the roots: the role of sensory sensitivity and respiration  
pattern variability in mental health**

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Sensory perception and respiration are two core features fundamental for human life, behavior and well-being. We are only able to live when we breathe and to understand the world when we perceive stimuli from it which we then interpret. Both features vary between individuals and between situations, for example during emotional challenges, and are likely relevant for mental health. Initial evidence suggests that body perception and respiration are coupled, but systematic research about their relationship and their association with mental disorders is currently lacking.

The presented work aims at advancing the understanding of sensory sensitivity and respiration pattern variability with regard to mental disorders and proposes biological mechanisms linking both together. Based on the results of two studies, one with autistic and one with remitted depressed participants, and supplemental analyses of a large independent sample these relationships are addressed.

In a sample of autistic individuals, sensory sensitivity was assessed with the sensory inventory, a newly developed standardized questionnaire on sensory sensitivity in which higher sensory sensitivity in autistic individuals was found. Scores of the inventory could further be used to discriminate autistic individuals with a sensitivity of 92% correctly from controls. In another sample more sensory content of memories was found to be related to increased memory for autobiographical events, pointing to a high relevance of sensory features in autism. In the second study, remitted depressed participants underwent a sad mood induction functional magnetic resonance imaging paradigm with negative autobiographical events as cues and were also assessed with the sensory inventory. In the remitted depressed participants higher respiration pattern variability during sad mood was found which was associated with lower body perception ability, worse outcome and relapse, and increased default mode network connectivity in comparison to healthy controls, demonstrating the importance of both concepts and their relationship in depression. Furthermore, in autistic and formerly depressed participants body perception was lower in comparison to controls, suggesting a broader distribution of this sensory alteration in mental disorders.

These relationships of sensory features as well as respiration and associated alterations with the intensity and course of mental disorders might also highlight important concepts for the development of future sensory and respiration-based interventions. Sensory aided trainings for everyday activities and interactions could be helpful to better memorize learned content. Respiration focused training could be a promising additional tool as it might not only influence respiration directly but also body perception, default mode connectivity and could be helpful for coping with stress and relaxing in general. Taken together, the present thesis might stimulate an increased attention of body related processes like sensory sensitivity and respiration pattern variability in the investigation of causes and treatments of mental disorders.